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FY 1999 - FY 2000

Hydraulic conductivity measurements will be performed on a variety of seepage barrier wall materials representing typical mixtures used in construction. Dye injection tests will be made in the flexible membrane back pressure test apparatus to see what flow conditions occur. We expect to prove that, for these cemented materials, the flow condition is much different from that which has been assumed. We will show that this test is not very valuable for either mix design or construction quality control testing. The results of this testing will change the current paradigm for control testing. The results of this testing will reduce design and construction costs associated with the construction of barrier walls.

Objectives for this year were to select material for use in the study, design the testing program, initiate testing, and evaluate progress.

The test material was obtained from the Twin Buttes Dam rehabilitation project. The field construction laboratory made cylinders from two different types of mix material used in the construction of the cut-off wall installed at the dam. These cylinders were formed in the field from the mix as it was being placed in the cut-off wall panels. In addition, the project office selected quality control cored samples obtained during cut-off wall drilling operations.

Testing was initiated on the first specimens from one of the mixes. The specimens were saturated and dyed water was injected into the system. Testing progressed much slower than planned due to the very low permeability of the test specimens.

Results are currently being evaluated.